10/575,924

# EAST Search History

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 93 | Ni adj Pt adj alloy | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2008/01/23 17:27 |
| L2 | 1109 | alloy adj catalyst | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2008/01/23 17:32 |
| L3 | 582 | l2 and supported | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2008/01/23 17:33 |
| L4 | 3763 | l3 and (Pt adj Ni) or (Ni adj Pt) | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2008/01/23 17:33 |

10/575,924

# EAST Search History

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 969 | (502/185).CCLS. | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2008/01/23 18:08 |

10/575,924

(FILE 'HOME' ENTERED AT 13:19:00 ON 23 JAN 2008)

FILE 'CAPLUS' ENTERED AT 13:19:36 ON 23 JAN 2008

```
=> s nickel and platinum
        661263 NICKEL
        229335 PLATINUM
L1       34953 NICKEL AND PLATINUM

=> s l1 and support
        511843 SUPPORT
L2        2677 L1 AND SUPPORT

=> s l2 and catalyst
        788445 CATALYST
L3        2044 L2 AND CATALYST

=> s l3 and alloy
        710745 ALLOY
L4         144 L3 AND ALLOY

=> s l4 and hydrogenation
        179354 HYDROGENATION
L5          14 L4 AND HYDROGENATION

=> d 1-14 bib abs

L5   ANSWER 1 OF 14  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2007:282118  CAPLUS
DN   146:338315
TI   The production and use of supported activated base metal catalysts for
     organic transformation
IN   Berweiler, Monika; Ostgard, Daniel; Quandt, Thomas; Roeder, Stefan
PA   Degussa A.-G., Germany
SO   PCT Int. Appl., 70pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
PI   WO 2007028411        A1    20070315    WO 2005-EP9656          20050908
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ,
             LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA,
             NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
             SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
             ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
             CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
             GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM
PRAI WO 2005-EP9656          20050908
AB   Method for the production of supported activated metal catalysts, whereby an
     metal alloy and, optionally, a metal powder and a pore builder
     are dispersed in a water, the dispersion is sprayed on a support
     or the support is rolled in the dispersion, and the coated
     support is the dried, calcined and activated.  The catalysts can
     be used for organic transformations, i.e. for hydrogenation
     reactions in the manufacture of hexamethylenediamine from adiponitrile.
RE.CNT  5     THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
```

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:371208 CAPLUS
DN 142:431969
TI Method for the production of aromatic amines from aromatic nitro compounds in the presence of supported nickel-platinum alloy hydrogenation catalysts
IN Van Laar, Frederik; Schwab, Ekkehard; Oehlenschlaeger, Steffen; Voss, Hartwig; Mackenroth, Wolfgang; Morgenschweis, Konrad; Penzel, Ulrich; Weidner, Bernd
PA BASF Aktiengesellschaft, Germany
SO PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI WO 2005037768 | A1 | 20050428 | WO 2004-EP11642 | 20041015 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| DE 10349095 | A1 | 20050519 | DE 2003-10349095 | 20031017 |
| EP 1678118 | A1 | 20060712 | EP 2004-790484 | 20041015 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK | | | | |
| CN 1867538 | A | 20061122 | CN 2004-80030516 | 20041015 |
| JP 2007508348 | T | 20070405 | JP 2006-534705 | 20041015 |
| US 2007149814 | A1 | 20070628 | US 2006-575924 | 20060414 |
| KR 2007007762 | A | 20070116 | KR 2006-708988 | 20060509 |
| PRAI DE 2003-10349095 | A | 20031017 | | |
| WO 2004-EP11642 | W | 20041015 | | |

OS CASREACT 142:431969
AB A method is described for the production of aromatic amines (e.g., diaminotoluenes) from aromatic nitro compds. (e.g., dinitrotoluenes) in the presence of supported (e.g., activated carbon) nickel-platinum alloy hydrogenation catalysts with the atomic ratio between nickel and platinum in the alloy ranging between 30:70 and 70:30, resp.
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:758808 CAPLUS
DN 141:260289
TI Preparation of trans-1-substituted-4-trifluoromethoxycyclohexanes
IN Negishi, Makoto; Nagashima, Yutaka; Kusumoto, Akio
PA Dainippon Ink and Chemicals, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|

PI JP 2004256442 A 20040916 JP 2003-49059 20030226
PRAI JP 2003-49059 20030226
OS CASREACT 141:260289; MARPAT 141:260289
AB The cyclohexanes 1,4-R2(A4L4)n3(A5L5)n4A6L6C6H10OCF3 [I; R2 = C1-20 (cyclo)alkyl, C1-20 (cyclo)alkoxy; R2 may be substituted with C1-10 alkoxy or 1-30 halogens; A4-A6 = trans-1,4-cyclohexylene, 1,4-phenylene, trans-2,6-decahydronaphthyl, 2,6-naphthyl; L4-L6 = (CH2)2, (CH2)4, CHMeCH2, etc.; n3, n4 = 0, 1], useful as liquid crystals or their intermediates (no data), are prepared by hydrogenation of benzenes 1,4-R1(A1L1)n1(A2L2)n2A3L3C6H4OCF3 [II; R1 = C1-20 (cyclo)alkyl, C1-20 (cyclo)alkoxy(alkyl), C2-20 (cyclo)alkenyl(oxy); R1 may be substituted with C1-10 alkoxy or 1-30 halogens; A1-A3 = same as A4-A6; L1-L3 = (CH2)2, (CH2)4, CH:CH, etc.; n1, n2 = 0, 1] over ≥1 catalysts chosen from Rh, Ru, Pt, Pd, Ir, Os, raney Ni, their alloys, their compds., and/or their mixts. Thus, trans-II (R1 = C5H11, A3 trans-1,4-cyclohexylene, L3 = single bond, n1 = n2 = 0) was hydrogenated over Pd/C at 80° to give 55% trans-I (R2 = C5H11, A6 trans-1,4-cyclohexylene, L6 = single bond, n3 = n4 = 0) with purity 99.7%.

L5 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:18619 CAPLUS
DN 140:62105
TI Alumina monolithic catalyst supports for hydrogenation -hydrotreating catalysts for pyrolysis gasoline
IN Boger, Thorsten R.; Roy, Shantanu; Sorensen, Charles M.
PA Germany
SO U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2004004031 | A1 | 20040108 | US 2002-184364 | 20020626 |
| | WO 2004003111 | A1 | 20040108 | WO 2003-US20455 | 20030625 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR | | | | |
| | AU 2003280430 | A1 | 20040119 | AU 2003-280430 | 20030625 |
| | EP 1516036 | A1 | 20050323 | EP 2003-742305 | 20030625 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| | CN 1678717 | A | 20051005 | CN 2003-820124 | 20030625 |
| | JP 2005530911 | T | 20051013 | JP 2004-518055 | 20030625 |
| | US 2005006281 | A1 | 20050113 | US 2004-913676 | 20040805 |
| | US 7014750 | B2 | 20060321 | | |
| PRAI | US 2002-184364 | A | 20020626 | | |
| | WO 2003-US20455 | W | 20030625 | | |

AB Hydrotreating of pyrolysis gasoline byproduct from steam cracking of petroleum feedstocks is carried out over multiple reactors containing an active hydrotreating-hydrogenation catalyst supported on a monolithic support comprised of one or more Al2O3 phases (e.g., a cordierite monolith washcoated with θ-Al2O3). Suitable hydrotreating-hydrogenation catalysts are selected from Ni, Pt, Pd, Rh, Ru, Ag, Fe, Cu, Co, Cr, Ir, and Sn. The monolith support has a cell d. of 10-2000 cells/sq. in. Hydrotreating results in >10% diene conversion in the pyrolysis gasoline.

L5 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:879751 CAPLUS
DN 139:383437
TI Hydrogen storage/supply system
IN Ichikawa, Masaru; Goto, Yasushi; Fukada, Kazuhiro; Fukaya, Kazuhiro
PA Sekisui Chemical Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2003321202 | A | 20031111 | JP 2002-126073 | 20020426 |
| PRAI JP 2002-126073 | | 20020426 | | |

AB In title system utilizing hydrogenation of H-storage article (i.e., aromatic compound) and/or dehydrogenation of H-supply article (i.e., hydrogenated derivative of aromatic compound) for storage and/or supply of H, the system includes the following means: (a) raw material storage means, (b) reactor with supported metal catalyst, (c) raw material supply means for supplying raw material to the reactor, (d) gas-liquid separation means for separating generated gas, (e) means for recovering separated H-storage article and/or H-supply article, and (f) heating means for heating the supported metal catalyst; in addition, the supported metal catalyst is supported on elec. conductive material supports, and the heating means is constructed to make high-frequency induction heating possible. The metal catalyst is selected from ≥ 1 of Ni, Pd, Pt, Rh, In, Ru, Mo, Re, W, V, Os, Cr, Co and Fe. The above stated supports are metal porous articles having sp. surface area ≥ 1000 m2/m3; or felt-like carbon materials having elec. resistance ≤ 100 Ω.m. The metal porous articles can be Ni or Ni alloy porous articles. The aromatic compound is selected from ≥ 1 of benzene, toluene, xylene, mesitylene, naphthalene, Me naphthalene, anthracene, biphenyl, phenanthrene, and their alkyl derivs. The hydrogenated derivative of aromatic compound is selected from ≥ 1 of cyclohexane, Me cyclohexane, 1,2-di-Me cyclohexane, 1,3-di-Me cyclohexane, decahydronaphthalene (decaline), and their alkyl derivs.

L5 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2002:832892 CAPLUS
DN 137:339791
TI Manufacture of lubricating base oils from solvent-refined oils by sequential hydroprocessing and aromatics hydrogenation
IN Collin, Marc; Duprey, Eric
PA Shell Internationale Research Maatschappij BV, Neth.
SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI WO 2002086025 | A1 | 20021031 | WO 2002-EP4417 | 20020419 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

| | | | | | |
|---|---|---|---|---|---|
| | CA 2444575 | A1 | 20021031 | CA 2002-2444575 | 20020419 |
| | AU 2002257792 | A1 | 20021105 | AU 2002-257792 | 20020419 |
| | EP 1379612 | A1 | 20040114 | EP 2002-727573 | 20020419 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| | BR 2002008932 | A | 20040420 | BR 2002-8932 | 20020419 |
| | CN 1503835 | A | 20040609 | CN 2002-808436 | 20020419 |
| | JP 2004531607 | T | 20041014 | JP 2002-583543 | 20020419 |
| | RU 2278147 | C2 | 20060620 | RU 2003-133670 | 20020419 |
| | US 2004065587 | A1 | 20040408 | US 2003-474928 | 20031016 |
| | IN 2003CN01640 | A | 20051125 | IN 2003-CN1640 | 20031016 |
| PRAI | EP 2001-400996 | A | 20010419 | | |
| | WO 2002-EP4417 | W | 20020419 | | |

AB Lubricating oil base oils, with >90 weight% sats., <0.03 weight% S, and 80-120 viscosity index, are manufactured from a solvent-refined base oil by: (1) hydrotreating the feedstock in one or more fixed beds composed of oxide-supported Group VIB metal and Group VIII metal catalysts to remove polar (e.g., S and N compds.), followed by (2) hydrogenation of the product from step (1) in one or more fixed beds of an oxide-supported noble metal catalyst in which the oil feedstock flows counter-current to the upflowing hydrogen-containing gas. The solvent-refined oil is a heavy feedstock (e.g., vacuum distillate) that undergoes solvent dewaxing or catalytic dewaxing prior to the first hydrotreating step. Suitable catalysts for step (1) are Co-Mo/Al2O3, Ni-Mo/Al2O3, and Ni-W/Al2O3; suitable catalysts for step (2) are Pt-Pd (or Pt-Pd alloy) supported on SiO2-Al2O3. Steps (1) and (2) are carried out at 300-370° and 250-320°, resp.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2002:384304 CAPLUS
DN 136:385939
TI Method for selective hydrogenation of alkene group of benzyloxyalkene to benzyloxyalkane and catalyst and catalyst structure used therefor
IN Koizumi, Megumi; Nishiki, Yoshinori; Furuta, Tsuneto; Maki, Shojiro; Tanba, Haruki
PA Permelec Electrode Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2002145818 | A | 20020522 | JP 2000-340644 | 20001108 |
| PRAI | JP 2000-340644 | | 20001108 | | |

OS CASREACT 136:385939
AB Provided are a method for selective hydrogenation of the unsatd. alkene group in hydrogenation of benzyloxyalkene dissolved in selected solvent while keeping the benzyl group protected and a catalyst and a catalyst structure used for the hydrogenation. Without accompanying hydrogenation of the benzyl group of benzyloxyalkene, selective hydrogenation of the unsatd. alkene group is carried out by feeding hydrogen gas or using active hydrogen deabsorbed from hydrogen-preabsorbed metal and using a platinum metal as the catalyst and at least one aprotic solvent selected from C1-3 aliphatic hydrocarbons possessing a C1-3 ketone group, petroleum ether, cyclic saturated hydrocarbon containing at last one oxygen atom in the chain, C1-3 aliphatic hydrocarbons possessing a C1-3 ester group in the main chain, or a mixed solution thereof, or a mixed solution therewith unsatd. cyclic aromatic hydrocarbons containing ≥1 benzene ring as the

solvent. The catalyst is gold, platinum group metal, or platinum group metal black catalyst, in particular palladium or palladium black precipitated by chemical reduction, electrochem. reduction, or reduction with active hydrogen deabsorbed from hydrogen-absorbed metal. It is precipitated in a three-dimensional structure on a support possessing a hydrogen-absorbing metal layer containing Pd, Pd alloy, Ni, Ti, Zr, Al, carbon, and rare earth metals. Thus, an aqueous solution of PdCl2 was added to one of the chamber of a H-shape cell divided by a palladium plate and an electrolyte (6 M aqueous KOH) to the other chamber. Water was electrolyzed using the palladium plate as the cathode and a nickel plate as the anode to generate hydrogen and palladium black was precipitated on the palladium plate by reduction of PdCl2 with hydrogen permeated through to the back of the palladium plate. The palladium black-precipitated palladium plate was formed into a cylinder and placed in a reactor. A 7 mM solution of 3-(2-benzyloxy-4,5-dimethoxyphenyl)-1-butene in benzene was hydrogenated in the reactor by feeding hydrogen for 4 h to give 80% 3-(2-benzyloxy-4,5-dimethoxyphenyl)butane together with unreacted starting material with no debenzylated product detected. Other catalyst used was palladium black supported on foamed nickel or porous carbon.

L5 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2000:854407 CAPLUS
DN 133:364310
TI Method for hydrogenation of olefin in reformed oil for saturation in the presence of catalyst
IN Mu, Xuhong; Zhang, Xiaoxin; Zong, Baoning; Ma, Aizeng; Min, Enze; Shu, Xingtian
PA Sinopec, Peop. Rep. China; Fushun Research Institute of Petroleum Processing, Sinopec
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 38 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | CN 1250799 | A | 20000419 | CN 1998-120381 | 19981013 |
| | CN 1068033 | B | 20010704 | | |
| PRAI | CN 1998-120381 | | 19981013 | | |

AB The process comprises allowing reformed oil to contact with H2 in the presence of catalyst at 50-200°, >0.1 MPa, LHSV 0.1-20 h-1, and ratio of H2/oil >30. The catalyst is prepared by loading amorphous alloy on porous carrier, composed of carrier, ≥1 of Group VIII metal, B and/or P, and metal additive. The alloy is composed of Group VIII metal, and B and/or P. The atomic ratios of VIII metal element to metal additive and B and/or P are 0.1-1,000 and 0.5-10, resp. The total content of VIII metal, and B and/or P in the catalyst is 0.1-60 weight%. The metal additive is selected from ≥1 of Group VIII elements, and other metals which can be obtained by reducing their salts with solution containing H2PO4-. The carrier is selected from ≥1 of inorg. oxide, activated C, zeolite, mol. sieve; the inorg. oxide from ≥1 of SiO2, Al2O3, MgO, and CaO; and the zeolite ≥1 of from A, X, Y, ZSM, mordenite, beta, faujasite, aluminophosphate, TS zeolites.

L5 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1995:958513 CAPLUS
DN 124:38747
TI Thin film hydrous metal oxide catalysts
IN Dosch, Robert G.; Stephens, Howard P.

PA Sandia Corp., USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 4

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 5461022 | A | 19951024 | US 1992-998997 | 19921231 |
| | US 6479427 | B1 | 20021112 | US 2000-503230 | 20000211 |
| PRAI | US 1991-751003 | A | 19910828 | | |
| | US 1992-998997 | A | 19921231 | | |
| | US 1993-23606 | A | 19930225 | | |
| | WO 1994-US1718 | W | 19940224 | | |
| | US 1995-507419 | A3 | 19951006 | | |

AB Thin film (<100 nm) hydrous metal oxide catalysts are prepared by (1) synthesis of a hydrous metal oxide, (2) deposition of the hydrous metal oxide upon an inert support surface, (3) ion exchange with catalytically active metals, and (4) activating the hydrous metal oxide catalysts.

L5 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1994:61641 CAPLUS
DN 120:61641
TI Catalyst for hydrogenation of halogenated hydrocarbons for disposal
IN Koppe, Juergen; Kraenke, Klaus; Schoenfeld, Dieter; Haugk, Helmut
PA Technische Hochschule "Carl Schorlemmer" Leuna-Merseburg, Germany
SO Ger. Offen., 3 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 4200790 | A1 | 19930729 | DE 1992-4200790 | 19920115 |
| PRAI | DE 1992-4200790 | | 19920115 | | |

AB The catalyst comprises a hydrogen halide-resistant support from an iron and/or nickel-based alloy containing ≥15% Cr (Nicrofer 7261) coated with TiO2 and impregnated with ≥1 of Pt, Pd, Rh, Ru, and Os, Re, or Ir. The hydrogenation is conducted with excess H at 150-300° and 1-100 atmospheric

L5 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1990:63744 CAPLUS
DN 112:63744
TI Radiolytic synthesis of pure and alloyed nickel microaggregates. Application to catalysis
AU Georgopoulos, Mikhael; Delcourt, Marie Odile
CS Lab. Phys.-Chim. Rayonnem., Univ. Paris-Sud, Orsay, 91405, Fr.
SO New Journal of Chemistry (1989), 13(7), 519-24
CODEN: NJCHE5; ISSN: 1144-0546
DT Journal
LA English
AB Optimizing the exptl. factors of the radiolytic synthesis leads to highly reduced colloid solns., as well as supported aggregates, for pure Ni and for Ni-Pd and Ni-Pt particles. The radiolytic yields are relatively low for sols, while they are very high during the 1st stages of reduction in the presence of SiO2 support, then decrease with further irradiation Catalytic properties of these particles were tested. The electron transfer reaction from the methylviologen radical ion to H2O was studied on sols. Pulse radiolysis expts. show that the relatively low activity of pure Ni is largely improved by small quantities of Pd (10%), being

comparable to that of pure Pt at pH 3. A significant pH effect is analyzed in terms of microelectrode overpotential. With SiO2-supported bimetallic particles, catalytic activity and selectivity were measured for 1,3-butadiene hydrogenation reaction. Pos. results were obtained with Ni-Pt aggregates. For sols. and supported particles as well, these results are a confirmation of the alloying effect.

L5 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1989:122286 CAPLUS
DN 110:122286
TI Formation of a nickel-copper-aluminum-calcium catalyst for hydrogenation of oxygen
AU Efremov, V. N.; Tesakova, G. M.; Mamaeva, I. A.; Golosman, E. Z.; Yakerson, V. I.
CS USSR
SO Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1988), 61(11), 2404-9
CODEN: ZPKHAB; ISSN: 0044-4618
DT Journal
LA Russian
AB A study was made to establish the optimum composition of Ni-Cu-Al-Ca catalysts for the H2 + O2 reaction. The evaluation of phase compns. was followed during the course of catalyst preparation by thermal and x-ray phase anal. Mixts. of Cu and Ni hydroxycarbonates were reacted with Ca aluminates in the presence of 25% NH3 solution Catalysts reduced at 600° contain Ni-Cu alloys, Y-Al2O3, CaO, and CaO.2Al2O3. The dispersion of the Ni-Cu alloy phase is 35-65 Å.

L5 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1988:444026 CAPLUS
DN 109:44026
TI Catalyst composition for hydrogenation and decarbonylation
IN Schroeder, Hobe; Wittman, Ricky L.
PA Amoco Corp., USA
SO U.S., 6 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI US 4743577 | A | 19880510 | US 1986-918390 | 19861014 |
| PRAI US 1986-918390 | | 19861014 | | |

OS CASREACT 109:44026
AB A catalyst composition, useful in decarbonylation and hydrogenation, particularly purification of terephthalic acid by hydrogenation of 4-carboxybenzaldehyde, consists essentially of a 1st catalytic metal selected from Pd and Rh and extended as a thin surface layer upon a 2nd support metal selected from Ti, Ni, and alloys comprising ≥1 support metal, and afforded as a porous, sintered substrate; the 1st metal is present at 0.1-10 weight percent, calculated as the elemental 1st metal and based on the weight of the catalyst composition Addnl., the catalyst has an intermediate metal layer selected from Cu, Pt, and their mixts. extended upon the surface of the 2nd support metal; the intermediate metal is present at 0.1-10 weight%, calculated as the elemental intermediate metal and based on the weight of the catalyst composition

L5 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1956:67953 CAPLUS
DN 50:67953

OREF 50:12619c-f
TI Causes for activity of nickel catalysts in hydrogenation reactions
AU Sultanov, A. S.
SO Kataliticheskoe Gidrirovanie i Okislenie, Akad. Nauk Kazakh. S.S.R., Trudy Konf. (1955) 79-88
DT Journal
LA Unavailable
AB The modes of formation of Ni surface structures and their combination with H atoms are discussed at length. Generally the greater the H content of the Ni catalyst the more effective is its hydrogenation activity. The greatest number of active Ni centers arises with catalysts having 10-15% Ni on a carrier support; the most effective catalysts are those approaching a composition of NiH4. Although this takes place best at 500° the most active catalysts cannot be prepared at this temperature which is unfavorable to the existence of simple metal-H complexes; this factor can be regulated by the use of high pressures of H2 during catalyst formation. The Ni catalysts prepared by leaching of alloys can form the hydride-metal structure even at low temperature The loss of activity of pure Ni-H catalysts is ascribed to poor stability of pure metal hydride structures and this transition to pure Ni lattice can be retarded by various addends before the activation of the catalyst . Ni-Al alloy catalysts are not promoted by Mo, Mn, Cr, W, As, or Sb, whereas Fe, Pt, Pd, and Rh are effective. The alloys NiAl3 and NiAl2 are readily activated, whereas the alloy NiAl is almost unaffected by alkalies. To preserve the Ni-H complex structure the use of temps. above 100° is undesirable.

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=> s "Ni-Pt alloy"
        633810 "NI"
        254854 "PT"
        710745 "ALLOY"
L6          48 "NI-PT ALLOY"
               ("NI"(W)"PT"(W)"ALLOY")

=> s l6 and supported
        230379 SUPPORTED
L7           1 L6 AND SUPPORTED

=> d bib abs

L7   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2006:951798  CAPLUS
DN   147:12692
TI   Preparation and characteristics of carbon nanotubes supported
     La-Ni-Pt catalysts
AU   Yang, Shu-ting; Yang, Wei-guang; Yin, Yan-hong; Yang, Jin-xin; Yue,
     Hong-yun
CS   Coll. Chem. Environ. Sci., Henan Normal Univ., Xinxiang, Henan, 453007,
     Peop. Rep. China
SO   Dianchi (2006), 36(3), 202-204
     CODEN: DNCHEP; ISSN: 1001-1579
PB   Dianchi Zazhishe
DT   Journal
LA   Chinese
AB   Carbon nanotubes (CNTs) supported La-Ni-Pt
     alloy catalysts were prepared using modified polyol process with
     ethylene glycol, polyvinylpyrrolidone (PVP) and hydrazine hydrate as
     reaction medium, protective agent and reducing agent, resp.  CNTs was
     pretreated.  The crystalline structure, morphol. and surface elements of
     La-Ni-Pt/CNTs and La-Ni-Pt alloys were investigated by XRD, TEM and EDS
     methods.  The electrocatalytic performance and acid corrosion resistance
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were investigated by electrochem. workstation. The results showed that, using CNTs as support, the electrocatalytic performance and acid corrosion resistance of the catalyst were improved.

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=> s "Pt-Ni alloy"
        254854 "PT"
        633810 "NI"
        710745 "ALLOY"
L8          69 "PT-NI ALLOY"
                 ("PT"(W)"NI"(W)"ALLOY")

=> s l8 and supported
        230379 SUPPORTED
L9           6 L8 AND SUPPORTED

=> d 1-6 bib abs

L9   ANSWER 1 OF 6  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2007:155955  CAPLUS
DN   147:525217
TI   Various types of Pt-Ni binary catalysts supported on carbon
     nanotubes as cathode catalysts for DMFC
AU   Seo, Yong-ki; Kim, Yong-hwan; Chung, Uoo-chang; Chung, Won-sub
CS   Department of Material Science and Engineering, Pusan National University,
     Pusan, 609-735, S. Korea
SO   Diffusion and Defect Data--Solid State Data, Pt. B: Solid State Phenomena
     (2007), 119(Nanocomposites and Nanoporous Materials), 247-250
     CODEN: DDBPE8; ISSN: 1012-0394
PB   Trans Tech Publications Ltd.
DT   Journal
LA   English
AB   Several methods for loading Pt-Ni binary catalysts on the CNTs were
     tested.  Using CNTs treated with HNO3, the catalysts Pt, Ni sep. (Pt and
     Ni/CNT) and Pt-Ni alloy (Pt-Ni/CNTs) were
     made.  The results of supporting were confirmed by TEM and XRD.  TEM
     images show that metal catalysts were loaded uniformly and finely on the
     CNTs.  XRD showed that Pt and Ni/CNTs displayed Pt and Ni peaks.  Also the
     peaks of Pt were shifted to the higher 2T angle in XRD which indicated
     that a Pt-Ni alloy was formed for
     Pt-Ni/CNTs.  Electrochem. tests of cathode catalysts for DMFCs were
     performed.  Pt-Ni/CNTs was the most suitable cathode catalysts for DMFCs.
RE.CNT  8     THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9   ANSWER 2 OF 6  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2006:988165  CAPLUS
DN   145:512729
TI   Oxygen reduction reaction in acid medium on Pt-Ni/C prepared by a
     microemulsion method
AU   Santos, L. G. R. A.; Oliveira, C. H. F.; Moraes, I. R.; Ticianelli, E. A.
CS   Instituto de Quimica de Sao Carlos, USP, Sao Carlos, SP, 13560-970, Brazil
SO   Journal of Electroanalytical Chemistry (2006), 596(2), 141-148
     CODEN: JECHES
PB   Elsevier B.V.
DT   Journal
LA   English
AB   This work discusses the electrocatalysis of the oxygen reduction reaction
     (ORR) in acid medium on ultra-thin coating electrodes formed by Pt-Ni
     nanoparticles dispersed on a C powder (Pt-Ni/C, 90:10, 75:25 and 60:40,
     Pt:Ni atomic proportion).  The catalysts were synthesized by a microemulsion
     method, using Brij 30 as surfactant.  X-ray diffraction and TEM were
     employed to estimate the catalyst particle size and to characterize the
crystalline
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structure. This technique indicated that the synthesized catalyst particles present a nano-crystalline structure. The electrochem. techniques considered were cyclic voltammetry and steady-state polarization curves, obtained using the rotating ring-disk electrode (RRDE) technique. The ORR takes place by a multi-electronic charge transfer process following a 4-electron mechanism. The kinetics of the ORR was evaluated using Tafel diagrams. The Pt activity for ORR is enhanced with the increase of the Ni amount on the Pt alloys.

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:125487 CAPLUS
DN 142:381088
TI Methanol tolerant oxygen reduction on carbon-supported Pt-Ni alloy nanoparticles
AU Yang, Hui; Coutanceau, Christophe; Leger, Jean-Michel; Alonso-Vante, Nicolas; Lamy, Claude
CS College of Chemistry and Environmental Science, Nanjing Normal University, Nanjing, 210097, Peop. Rep. China
SO Journal of Electroanalytical Chemistry (2005), 576(2), 305-313
CODEN: JECHES
PB Elsevier B.V.
DT Journal
LA English
AB The preparation of C-supported Pt-Ni alloy catalysts at a 40% total metal loading and with high Ni content within the alloys and their electrocatalysis for the oxygen reduction reaction was studied. Emphasis is placed on the MeOH-tolerant oxygen reduction on as-prepared alloy catalysts and their application in direct MeOH fuel cells. As-prepared alloy catalysts have single-phase disordered structures and small particle sizes with a relatively narrow size distribution even at 40% loading. As compared to pure Pt/C catalyst for oxygen reduction, such alloy catalysts exhibited enhanced electrocatalytic activities in pure acidic electrolyte and significantly enhanced electrocatalytic activities in MeOH-containing electrolyte. The high MeOH tolerance of Pt-Ni alloy catalysts during oxygen reduction could be ascribed to a lowered activity of MeOH oxidation, which may originate from the composition effect and the disordered structure of the alloy catalysts. Fuel cell tests confirmed that as-prepared Pt-Ni alloy catalysts for oxygen reduction are more active than a com. Pt/C catalyst with the same metal loading and that the maximum activity was found with a Pt/Ni atomic ratio of 2:1, which is similar to results in half-cell tests.

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:511317 CAPLUS
DN 141:196531
TI Structure and Electrocatalytic Activity of Carbon-Supported Pt-Ni Alloy Nanoparticles Toward the Oxygen Reduction Reaction
AU Yang, Hui; Vogel, Walter; Lamy, Claude; Alonso-Vante, Nicolas
CS Laboratory of Electrocatalysis, UMR CNRS 6503, University of Poitiers, Poitiers, F-86022, Fr.
SO Journal of Physical Chemistry B (2004), 108(30), 11024-11034
CODEN: JPCBFK; ISSN: 1520-6106
PB American Chemical Society
DT Journal
LA English
AB Vulcan XC-72 C-supported Pt-Ni alloy nanoparticle catalysts with different Pt/Ni atomic composition were prepared via the

carbonyl complex route and their structure was studied by x-ray diffraction spectroscopy at wide angles (WAXS) and Debye function anal. (DFA). The very good agreement between the WAXS pattern and DFA simulation revealed that all the as-prepared Pt-Ni alloy catalysts have a unique and highly disordered face centered cubic structure (solid solution) and that the lattice parameter decreases with the increase of the Ni content in the alloys. TEM images indicated that the as-prepared Pt-Ni alloy nanoparticles were well dispersed on the surface of the C support with a narrow particle size distribution and that their mean particle size slightly decreased with the increase in Ni content. Energy-dispersive x-ray anal. (EDX) confirmed that the catalyst composition was nearly the same as that of the nominal value. Thus, a comparative study was made for the oxygen reduction reaction (ORR) using the thin-film rotating ring-disk electrode method to the behavior of Pt based catalysts on the same C support, having the same metal loading, the same disordered structure, and a similar particle size. As compared to the Pt/C catalyst, the bimetallic catalysts with different Pt/Ni atomic ratios exhibited an enhancement factor of .apprx.1.5 to 3 in the mass activity and of .apprx.1.5 to 4 in the specific activity for the ORR and a lower production of H2O2 in pure HClO4 solution The maximum activity of the Pt-based catalysts was found with ca. 30-40 atomic% Ni content in the alloys, which could originate from the favorable Pt-Pt interat. distance. The ring-current measurements on all the catalysts showed similar behavior for H2O2 production The enhanced electrocatalytic activity of as-prepared Pt-Ni alloy catalysts for the ORR is attributed to the high dispersion of the alloy catalysts, to their disordered structure, and to the favorable Pt-Pt mean interat. distance caused by alloying.

RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1986:231281 CAPLUS
DN 104:231281
OREF 104:36587a,36590a
TI The surface composition of silica-supported platinum-nickel alloys
AU Wielers, A. F. H.; Van der Grift, C. J. G.; Geus, J. W.
CS Dep. Inorg. Chem., Univ. Utrecht, Utrecht, 3522 AD, Neth.
SO Applied Surface Science (1986), 25(3), 249-64
CODEN: ASUSEE; ISSN: 0169-4332
DT Journal
LA English
AB The surface composition of small supported Pt-Ni alloy particles (diameter 2-5 nm) was determined by means of IR spectra of adsorbed CO and NO. By dosing CO and NO in the appropriate sequence to the alloys, CO is adsorbed selectively on the Pt atoms and NO on the Ni atoms. On the alloy surfaces no reaction occurs between these adsorbed species as the bands observed do not change upon standing in vacuo. With increasing bulk Ni concentration the intensity of the CO/Pt band drops, whereas the intensity of the NO/Ni band increases. The band maximum of the CO/Pt band shifts continuously to lower wavenumbers and the shape of the NO/Ni band changes. The composition of the surface is almost equal to that of the bulk.

L9 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1981:619507 CAPLUS
DN 95:219507
OREF 95:36617a,36620a
TI Catalytic activity of alumina supported platinum-nickel alloys
AU Renouprez, A. J.; Moraweck, B.; Imelik, B.; Perrichon, V.; Domingez-Esquivel, J. M.; Jablonski, J.
CS Inst. Rech. Catal., Villeurbanne, 69626, Fr.

SO Studies in Surface Science and Catalysis (1981), 7(Pt. A, New Horiz. Catal.), 173-85
CODEN: SSCTDM; ISSN: 0167-2991
DT Journal
LA English
AB X-ray diffraction and XPS were used to characterize alumina-supported Pt-Ni alloy catalysts. A synergetic effect was detected for the isomerization and hydrogenolysis of neopentane on these catalysts. Adsorption occurs mainly on Ni; isomerization occurs mainly on the surrounding Pt atoms.